

NAVIGATION.

The usual tabular exhibit of river-changes for the month will be found on chart No. III. The following data show the condition of navigation on the rivers, the lakes and along the Atlantic sea-coasts:

(1) *Ice in the North Atlantic.*—European steamships arriving at American ports reported very large quantities of ice in the North Atlantic during the first part of April. On April 1st the steamer China passed a very large iceberg; also a very large ice-floe in latitude $46^{\circ} 53'$ N., longitude $41^{\circ} 25'$ W. The next day and the day following, the steamer City of New York had similar experience in latitude $41^{\circ} 53'$ N., longitude $53^{\circ} 09'$ W. On April 2d, the steamship Italy passed several icebergs in latitude $42^{\circ} 10'$ N., longitude $50^{\circ} 04'$ W. The day after, the steamship Ethiopia, in latitude $42^{\circ} 38'$ N., longitude $49^{\circ} 31'$ W., encountered a large iceberg, and the steamship Switzerland numerous icebergs and field-ice, extending westward to longitude $50^{\circ} 31'$. April 8th, the steamship Baltic, in latitude $42^{\circ} 02'$ N., longitude $42^{\circ} 12'$ W., met five large icebergs. As late as April 10, Penobscot bay was still solidly bridged with ice, averaging fifteen inches thick, and on that date the steamship Schiller, in latitude 42° N., longitude 50° W., saw an immense iceberg. April 13th, the steamship Weser, in the same locality, passed a great quantity of drift-ice and a large iceberg. April 15th, the steamship W. A. Scholten, in latitude $44^{\circ} 07'$ N., longitude $49^{\circ} 12'$, was surrounded by heavy fields of ice, stretching as far as the eye could reach, many cakes twenty feet thick, with surfaces of five thousand square feet, while icebergs, eighty feet high and six hundred feet long, surrounded the steamer, which escaped with difficulty. Still later, on the 26th, the steamship Severn, in latitude $47^{\circ} 36'$ N., longitude $69^{\circ} 28'$, was embayed and fast-stuck in the midst of large quantities of ice, and, after escaping in a damaged condition, ran through the ice-fields one hundred and eighty-five miles south.

(2) *The Reopening of River and Lake Navigation.*—As late as April 5th, large quantities of ice came down the North river and obstructed New York harbor. Ice broke up in Seneca lake, N. Y., and navigation resumed on the 5th. At Mount Desert, Me., the lower harbor opened on the 26th. At Bangor, Me., river open on the 16th. Grand Traverse bay, Mich., cleared on the 14th. The Red river of the North on the 19th, and first boat arrived on the 22d. Chataqua lake, N. Y., cleared on the 13th. Navigation partly opened on Lake Ontario about the middle of April. At Muscatine, Iowa, first boat on the 5th; at Fort Madison, Iowa, first boat on the 4th. At Albany, N. Y., ice moved on the 1st and 2d; Connecticut river thawed at Springfield, Mass., on the 2d; on the 1st ice broke above West Point, N. Y.; on the 8th the Hudson river was open from New York to Albany. At Erie, Pa., Lake Erie was open on the 17th; on the 12th navigation opened from Detroit to Cleveland; the St. Paul ice-gorge broke on the 4th and navigation opened on the 25th. Navigation was resumed at Buffalo on the 2d; at Chicago ice broke on the 1st, and at Grand Haven navigation was free on the 3d.

ATMOSPHERIC ELECTRICITY.

(1.) *Thunder and Lightning.*—The following data exhibit the prevalency of thunder and lightning: On the 1st in Ala., La., and N. Y.; on the 3d in Ill., Ind., and Maine; on the 6th in Iowa, Kan., and Neb.; on the 7th in Iowa, Kan., and Texas; on the 8th in Ala., Ill., La., Miss., and Tenn.; on the 9th in Ala., La., and S. C.; on the 10th in Ala., Ga., La., Penn., S. C., and Tenn.; on the 11th in Ala., Ga., Kan., Ohio, Penn., and S. C.; on the 16th in Ga., Ill., Me., Mass., N. H., and R. I.; on the 19th in Ill., Ind., Iowa, Kan., Mo., N. Y., Ohio, Tenn., and Texas; elsewhere on the 20th, 27th and 29th.

(2.) *Auroras* have been observed as follows: On the 6th in Ill., Me., and N. Y.; on the 7th in Conn., Ill., Me., Mass., Mich., N. H., N. J., N. Y. and Vt.; on the 8th in Me., N. H., and Vt.; on the 9th in Vt. and Iowa.; on the 26th in Conn., Me., Mass., Mich., N. H., and N. Y.

OPTICAL PHENOMENA.

(1) *Solar halos* were reported as follows: From New Hampshire, New York and Pennsylvania on the 1st; Indiana and Ohio, on the 2d; Iowa on the 4th, Tennessee on the 5th; and from many other points on the 14th, 22d, 26th, 28th and 29th.

(2) *Lunar halos* were reported as follows: From Maryland, New Jersey, New York, Pennsylvania and Ohio, on the 10th; Maine, New Hampshire and Michigan, on the 13th; Illinois, Indiana, Iowa, Missouri, New York, Pennsylvania and North Carolina, on the 14th; and from other points on the 16th, 18th and 20th.

(3) *Mirage*.—Ellinwood, Kan., on the 14th, 17th, 22d and 27th; Traverse City, Mich., 8th and 28th.

MISCELLANEOUS.

(1.) *Injury to vegetation*. In addition to the remarks already made on this topic, under the head of ATMOSPHERIC TEMPERATURE, (2.) the following notes are important: At Troy, Alabama, the field and garden crops have suffered. At Wilsonville, Alabama, on the 19th, the frost was damaging to fruits and vegetables. At Gainesville, Georgia, fruit was largely killed. At Wyanet, Illinois, plants froze under cover from the 15th to the 18th. At Vevay, Indiana, frost on 17th was killing. At Rising Sun, Indiana, on the 16th, 17th and 18th, the same case occurred. At Winchester and Pine Grove, Kentucky, fruits and vegetables were generally damaged. At Northport, Michigan, the winter-cold was very damaging to all fruits; grapes, however, wintered better than usual. At Asheville, North Carolina, on the 17th and 18th, peach and cherry crops were killed and apples injured; so also at Mount Pleasant, North Carolina. At Bellefontaine, and other points in Ohio, fruits of all kinds were injured. At Tarentum, and other points in Pennsylvania, fruit and wheat were injured. Beans were destroyed on 17th and 18th, at Hacienda Saludar South Carolina. In Tennessee and Virginia, fruit and vegetables were injured and trees and plants frozen.

(2.) *Meteors* were reported in Ill. on the 2d and 3d; Ga. and S. C. on the 4th; Md. on the 5th, 7th and 14th; Miss. and N. J. on the 6th; Ala. on the 15th and 17th; Iowa on the 18th; Kan. on the 20th and 21st; N. Y. on the 23d; Mass. on the 27th; R. I. on the 30th.

(3.) *Polar Bands* on the 19th at New Haven; on the 21st and 28th at Buffalo; on the 22d at Alpena; on the 19th, 21st and 28th at Iowa City.

(4.) *Zodiacal Light* on the 1st at Corning, Mo.; on the 4th at Linden, Ill.; on the 6th at Point Pleasant, La.; on the 25th at Wooster, Ohio.

(5.) *Water and Barometer Oscillations*.—At Marquette, on Lake Michigan, the water and the barometer oscillated together twenty-five times, and in a contrary manner sixty-five times.

(6.) *Zoological*.—*Wild Geese* were seen going S. E. at Madison Barracks, N. Y., on the 1st; going N. at New London on the 1st, 2d and 11th; going S. at Detroit on the 21st; going N. at Dubuque on the 1st, 17th, 22d and 26th; at St. Paul on the 2d and 8th; at Atlantic City on the 1st, 2d and 8th; at Wood's Hole on the 8th, and harbor full of geese on the 14th. *Blue Birds* arrived at Standish, Me., on the 2d; at Amherst, Mass., 1st; on the 2d, Contoocookville, N. H.; Auburn, N. H., 1st. *Wild Pigeons* arrived, Independence, Iowa, on the 3d; going N. at Cresco, Iowa, on the 2d; on the 11th, at Auburn, N. H. *Robins*, on the 6th, at Springfield, Mass.; at Cornish and Standish, Me., on the 2d. *Swallows*, on the 29th, at Morgantown, W. Va.; at Ellinwood, Kan., on the 2d. *Buffalo Gnats* first appear at Memphis on the 22d; on the 29th, very destructive to stock. *Grasshoppers* reported on the 20th from all parts of Colorado Territory; at Leroy, Kan., young grasshoppers, very numerous and destructive, were actively attacking vegetation.

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